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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,651	11/12/2003	Lewis B. Aronson	15436.186.2	7011

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EXAMINER

STEIN, JAMES D

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,651

Applicant(s)

ARONSON ET AL.

Examiner

James D. Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/20/05
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is responsive to the amendment filed on 5/20/05, which has been fully considered and entered into the prosecution record. Claims 1, 9 and 20 have been amended. Claims 1-24 are pending in the application.

Applicant's arguments in view of the amendments, filed on 5/20/05, with respect to the rejections of claims 1 and 9 under 35 U.S.C. 102(e) have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of [USPAT 6,663,296] to Blair et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over [USPUB 20030091304] to Tonai et al. ("Tonai") and further in view of [USPAT 6,663,296] to Blair et al. ("Blair"), which disclose related optoelectronic modules.

With regard to claim 1, Tonai discloses a related optoelectronic module and coupler for reducing back reflection into the optical fiber comprising a housing sleeve 13 having an opening (near A2) for receiving an optical fiber (Fig. 3B). Furthermore, Fig. 3B shows an optical component 25 having a first facet 30 and a second facet. Tonai teaches ferrule 52a of optical fiber 52b to contact said optical component 30, "One of the pair of faces is provided so as to abut against an end of the optical fiber [¶0008]."

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Additionally, said second facet is shown displaced from the terminal end of said optical fiber 52b, and Tonai teaches said optical component to function so as to “[restrain] reflected light occurring at the optical fiber end face from going back to the optical fiber [abstract],” as claimed by applicant. Fig. 9 illustrates this property.

Therefore, Tonai discloses the claimed invention except for the first facet of the optical component being parallel to the second facet of the optical component. Fig. 1 of Blair et al. shows a similar optoelectronic module comprising an optical component 35 having a first and second facet parallel to one another, and the terminal end of optical fiber 14 contacts the first facet of the optical component (col. 4 line 23). Blair teaches that the optical component substantially reduces and suppresses return reflections into the fiber (col. 4 lines 20-24). Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify the optoelectronic module disclosed by Tonai such that the optical component had a first facet and a second facet parallel to one another, as is taught by Blair, in order to further prevent optical signals which are internally reflected within the optical component from entering into the terminal end of the optical fiber (reduce return reflection).

With regard to claim 2, in addition to the rejection of claim 1 discussed above, Tonai teaches, “the optical part 25 may be attached to the sleeve body in a position displaced from an appropriate position on a plane perpendicular to the direction in which the optical fiber extends.” This feature is illustrated by Fig. 3B, which shows axis of optical fiber 52b to be normal to said first facet 30 of said optical component 25.

With regard to claim 3, in addition to the rejection of claim 1 discussed above, Tonai discloses optical part 25 comprising glass [¶0060].

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With regard to claim 4, in addition to the rejection of claim 1 discussed above, Tonai teaches, “the other end portion of the sleeve 13 is provided with a photoelectric transducer attaching portion 23 for attaching the photoelectric transducer 15 [¶0059].” Attaching portion 23 is shown to be a port for interfacing said photoelectric transducer. Said photoelectric transducer 15 is shown by Fig. 3B to comprise a package including a plurality of load terminals 15b, thus comprising an “optoelectronic package”, as claimed by applicant.

With regard to claim 5, in addition to the rejection of claim 4 discussed above, Tonai further specifies said photoelectric transducer 15 to further comprise a “receiver optical subassembly,” as claimed by applicant: “The light-receiving subassembly 15 comprises a mounting member 15a, a plurality of lead terminals 15b, a semiconductor light-receiving device 15c, a lens holding member 15d, and a lens 15e. An example of the mounting member 15a is a stem [¶0055].” This teaching fully anticipates that of applicant regarding a “receiver optical sub-assembly.”

With regard to claim 6, in addition to the rejection of claim 1 discussed above, fig. 3B of Tonai shows housing comprising a ferrule 13a and a “base” 13b, as claimed by applicant.

With regard to claim 7, in addition to the rejection of claim 6 discussed above, fig. 3B of Tonai shows the base 13b to comprise a protrusion, which cooperates with optical component 25 so as to position the optical component 25 within an opening 13d of the ferrule 13a.

With regard to claim 8, in addition to the rejection of claim 1 discussed above, fig. 3B of Tonai shows a mounting portion 13b of said sleeve base 13 is at least partially

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connected to optical component 25 so as to position said optical component 25 in a at least a portion of a port 13d within said housing 13.

With regard to claim 9, all limitations of this claim have been disclosed and previously discussed above in the rejection of claim 1, except for “the first optical component having a diameter that is greater than a diameter of the core of the optical fiber.” In addition to fig. 3B, this relationship is shown clearly in figs. 8A and 8B of Tonai.

With regard to claims 10 and 13, in addition to the rejection of claim 9 discussed above, fig. 2B shows a port 8d adapted to receive a second optical device 9, which is taught to be a light-emitting sub-assembly [¶0048-¶0051]. A light-emitting sub-assembly is analogous to a “transmitter sub-assembly,” as claimed by applicant.

With regard to claims 11 and 12, in addition to the rejection of claim 10 discussed above, fig. 3B of Tonai shows an air gap region disposed between the first optical component 25 and the light-receiving sub-assembly 15. Said first optical component is taught to be glass [¶0060], which has a higher index of refraction than that of air.

With regard to claim 14, in addition to the rejection of claim 13 previously discussed above, Tonai teaches an alternate embodiment of the invention wherein said light-emitting sub-assembly 9 is further comprised of a semiconductor laser element 9c, and a lens 9e. “By way of the lens 9e, the semiconductor light-emitting device 9c is optically coupled to an optical fiber inserted into the sleeve 8 [¶0049].” Such functionality requires said lens 9e “to be in optical communication with the laser transmitter,” as claimed by applicant. Furthermore, lens 9e functions such that “light from a light-emitting device 9a is incident on an end of the optical fiber [¶0048],” which

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is analogous to focusing “electromagnetic radiation upon the terminal end of the fiber,” as claimed by applicant.

With regard to claim 15, in addition to the rejection of claim 9 discussed above, Tonai teaches, “the optical part 25 may be attached to the sleeve body in a position displaced from an appropriate position on a plane perpendicular to the direction in which the optical fiber extends [¶0076].” This feature is illustrated by Fig. 3B, which shows axis of optical fiber 52b to be normal (perpendicular) to said first facet 30 of said optical component 25.

With regard to claim 16, in addition to the rejection of claim 9 discussed above, Tonai teaches, “the optical part 25 has a cylindrical form with a diameter 36 of 1.7 mm and a thickness of 0.5 mm, for example [¶0060].” This teaching anticipates the range of thickness for optical component 25 of “less than about 2mm,” as claimed applicant.

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With regard to claim¹⁷, in addition to the rejection of claim 9 previously discussed above, Tonai-Blair disclose the claimed invention except for an optical component thickness of approximately 1mm. However, Tonai discloses an optical component thickness of approximately 0.5mm [¶0060], which is approximately 1mm. To the extent applicant believes this is not so, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a thickness of 1mm in order to minimize back reflection into the optical fiber, since it has been held that discovering an optimum value (applicant’s 1mm) of a result effective variable (Tonai’s 0.5mm) involves only routine skill in the art (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)). It is noted to applicant that a specific value or range of values is not patentable unless it produces unexpected results.

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With regard to claim 18, in addition to the rejection of claim 9 discussed above, fig. 3B of Tonai shows a mounting portion 13b of said sleeve base 13 is at least partially connected to optical component 25 so as to position said optical component 25 in a at least a portion of a port 13d within said housing 13.

With regard to claim 19, in addition to the rejection of claim 18 discussed above, fig. 3B of Tonai shows a lip portion 13c disposed about and extending from a periphery of said housing 13.

With regard to claim 20, all limitations of this claim have been disclosed and previously discussed above except for said housing having a port adapted to receive an optoelectronic package. Fig. 3B of Tonai shows a port region 23 of said housing 13 adapted to receive said light-receiving sub-assembly package 15.

With regard to claim 21, in addition to the rejection of claim 20 discussed above, fig. 3B of Tonai shows housing 13 to further comprise a base 13a/13d and a ferrule 52a, as claimed by applicant. Tonai teaches, “the ferrule 52a of the optical connector 52 is inserted into the sleeve 13 while being guided by the inner side face 13d, and abuts against one face 30 of the optical part 25 [¶0058].” Therefore, said ferrule 52a is “capable of connecting to the base,” as claimed by applicant.

With regard to claim 22, in addition to the rejection of claim 20 discussed above, fig. 3B of Tonai shows an air gap region disposed between the first optical component 25 and the optoelectronic package 15. Said first optical component is taught to be glass [¶0060], which has a higher index of refraction than that of air.

With regard to claim 23, in addition to the rejection of claim 20 discussed above, Tonai teaches an alternate embodiment of the invention, shown in fig. 2A, wherein said

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optoelectronic package is a light-emitting subassembly 9 [¶0051]. A light-emitting subassembly 9 anticipates applicants claim of a transmitting optical sub-assembly TOSA.

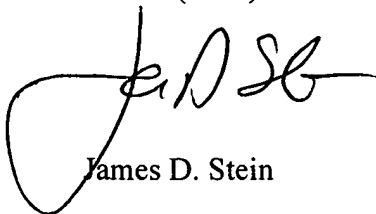
With regard to claim 24, in addition to the rejection of claim 20 discussed above, a mounting portion 13b of said sleeve base 13 is partially connected to optical component 25 so as to position said optical component 25 in a center portion the port 23 within said housing 13 (Fig. 3B).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



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PRIMARY EXAMINER